

## Taper files explained

Michael Wollowski

Why do tutorials and experts suggest different sized files for saws with different numbers of teeth per inch? Taper files have three sides, as such each of the angles is 60 degrees; why not use just one file? The answer is simple: You can use just one file, if you want to make your life harder than it needs to be. If you want to get away with just one file, you need to pick one that will work for the biggest saw, i.e. the saw with the fewest teeth per inch. Consider figure 1. If the file is too small, as indicated on the right, you will not form teeth. The file needs to be proud of the biggest tooth you will file as indicated on the left. Now that you are ready to get that big file, consider what happens when you try to use it to sharpen a saw with a high tooth count. There are several problems, to begin, it is hard to see what you are doing. Second, larger files, even a double extra slim file has a wider tooth spacing than that of a smaller file of the same kind. As such, with a smaller file, you will remove less materials giving you more control and it will also be easier to remove materials, as more teeth are in contact with the metal of the saw.



Figure 1: Gullets

**Which files to buy.** Taper files are specified by length and “cut.” Typical lengths are 4 to 8 inches. The cut is either “regular,” “slim,” “extra slim,” or “double extra slim” and indicates the number and size of teeth. A finer cut means smaller teeth and more of them per inch. It also means a smaller width of the file. There is considerable overlap among files. For example, a 7 inch extra slim file and a 6 inch slim file both are 21/64 inches wide. This comes in handy if you need a file real quick, and your hardware store does not carry the desired file in stock. Most hardware stores carry 6 or 7 inch files. If you buy a 6 inch regular, slim, extra slim and double extra slim files, you get files of the following widths: 30/64, 21/64, 17/64, and 15/64. This enables you to file saws from 5 to 11 TPI. I happen to like longer files, hence I own 8, 7, 6 inch double extra slim files, with the following widths: 19/64, 17/64, 15/64. In order to file saws with a higher number of teeth per inch, you may also wish to obtain 5 and 4 inch double extra slim files of the following widths: 12/64, 11/64.